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INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT

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Sheet

1

of

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## Complete if Known

Application Number	09/921,645
Filing Date	August 3, 2001
First Named Inventor	Meade, Thomas
Group Art Unit	1637
Examiner Name	Strzelecka, Teresa, Ph.D.

Attorney Docket Number

A-64411-2/RFT/RMS/RMK

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## U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No. <sup>1</sup>	U.S. Patent Document Number-Kind Code <sup>2</sup> (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
A0	4,704,193		11/1987	Bowers et al.	
A1	4,707,352		11/1987	Stavrianopoulos	
A2	4,707,440		11/1987	Stavrianopoulos	
A3	4,711,955		12/1987	Ward et al.	
A4	4,755,458		7/1988	Rabbani et al.	
A5	4,787,963		11/1998	MacConnell	
A6	4,840,893		6/1989	Hill et al.	
A7	4,849,513		7/1989	Smith et al.	
A8	4,868,103		9/1989	Stavrianopoulos et al.	
A9	4,894,325		1/1990	Englehardt et al.	
A10	4,943,523		7/1990	Stavrianopoulos	
A11	4,945,045		7/1990	Forrest et al.	
A12	4,952,685		8/1990	Stavrianopoulos	
A13	4,994,373		2/1991	Stavrianopoulos	
A14	5,002,885		3/1991	Stavrianopoulos	
A15	5,013,831		5/1991	Stavrianopoulos	
A16	5,082,830		1/1992	Brakel et al.	
A17	5,089,112		2/1992	Skotheim et al.	
A18	5,175,269		12/1992	Stavrianopoulos	
A19	5,180,968		1/1993	Bruckenstein et al.	
A20	5,241,060		8/1993	Englehardt et al.	
A21	5,242,828		9/1993	Bergstrom et al.	
A22	5,278,043		1/1995	Bannwarth et al.	
A23	5,312,527		5/1994	Mikkelsen et al.	
A24	5,328,824		7/1994	Ward et al.	
A25	5,356,786		10/1994	Heller et al.	
A26	5,391,272		2/1995	O'Daly et al.	
A27	5,403,451		4/1995	Riviello et al.	
A28	5,436,161		7/1995	Bergstrom et al.	

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Substitute for form 1449A/PTO				<b>Complete if Known</b>	
<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> (use as many sheets as necessary)				Application Number	09/921,645
Sheet	2	of	11	Filing Date	August 3, 2001
				First Named Inventor	Meade, Thomas
				Group Art Unit	1637
				Examiner Name	Strzelecka, Teresa, Ph.D.
				Attorney Docket Number	A-64411-2/RFT/RMS/RMK

<b>U.S. PATENT DOCUMENTS</b>					
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A29	5,443,701		8/1995	Willner et al.	
A30	5,449,767		9/1995	Ward et al.	
A31	5,472,881		12/1995	Beebe et al.	
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A33	5,552,270		9/1996	Khrapko et al.	
A34	5,565,552		10/1996	Magda et al.	
A35	5,571,568		11/1996	Ribi et al.	
A36	5,573,906		11/1996	Bannwarth et al.	
A37	5,591,578		1/1997	Meade et al.	
A38	5,595,908		1/1997	Fawcett et al.	
A39	5,601,982		2/1997	Sargent et al.	
A40	5,620,850		4/1997	Bamdad et al.	
A41	5,632,957		5/1997	Heller et al.	
A42	5,700,667		12/1997	Marble et al.	
A43	5,705,348		1/1998	Meade et al.	
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A45	5,756,050		5/1998	Ershov et al.	
A46	5,770,369		6/1998	Meade et al.	
A47	5,770,721		6/1998	Ershov et al.	
A48	5,776,672		7/1998	Hashimoto et al.	
A49	5,780,234		7/1998	Meade et al.	
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A51	5,837,859		11/1998	Teoule et al.	
A52	5,849,486		12/1998	Heller et al.	
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A55	6,087,100		7/2000	Meade et al.	
A56	6,096,825		8/2000	Garnier	

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Sheet	3	of	11	Filing Date	August 3, 2001
				First Named Inventor	Meade, Thomas
				Group Art Unit	1637
				Examiner Name	Strzelecka, Teresa, Ph.D.
				Attorney Docket Number	A-64411-2/RFT/RMS/RMK

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	A57	6,177,250	1/2001	Meade et al.	
	A58	6,180,352	1/2001	Meade et al.	
	A59	6,200,761	3/2001	Meade et al.	
	A60	6,207,369	B1	Wohlstadter et al.	
	A61	6,238,870	5/2001	Meade et al.	

<b>FOREIGN PATENT DOCUMENTS</b>						
Examiner Initials*	Cite No.	Foreign Patent Document Country Code <sup>2</sup> Number <sup>4</sup> Kind Code <sup>5</sup> (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	
	B1	EP 0 234 938	A2	2/1987	Cranfield Inst. of Tech.	
	B2	EP 0 229 943	B1	7/1987	Molecular Biosystems Inc.	
	B3	EP 0 599 337	A2	1/1994	Canon Kabushiki Kaisha	
	B4	EP 0 063 879	A2	11/1982	Yale University	
	B5	EP 0 515 615		9/1996	Boehringer Nannheim	
	B6	CA 2 090 904	A1	9/1993	F. Hoffman-La Roche	
	B7	JP 238,166	A	1988	Mitsubishi Corp.	Abstract
	B8	JP 6-41183	A2	1994	Mitsubishi Corp.	
	B9	WO 86/05815	A1	3/1985	Genentics International Inc.	
	B10	WO 90/05732	A1	5/1990	Columbia Univ.	
	B11	WO 92/10757	A1	6/1992	Boehringer Mannheim	
	B12	WO 93/22678	A2	11/1993	Mass Inst. of Tech.	
	B13	WO 93/10267	A1	5/1993	IGEN, Inc.	
	B14	WO 94/22889	A1	10/1994	Cis Bio International	
	B15	WO 95/15971	A2	6/1995	Calif. Inst. of Technology	
	B16	WO 96/40712	A1	12/1996	Calif. Inst. of Technology	
	B17	WO 97/01646	A2	1/1997	Univ. of N. Carolina	
	B18	WO 97/44651	A1	11/1997	AU Membrane and Biotech.	
	B19	WO 97/27329	A1	7/1997	Univ. of Chicago	
	B20	WO 98/27229	A1	6/1998	Univ. of Chicago	

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				Application Number	09/921,645
				Filing Date	August 3, 2001
				First Named Inventor	Meade, Thomas
				Group Art Unit	1637
				Examiner Name	Strzelecka, Teresa, Ph.D.
Sheet	4	of	11	Attorney Docket Number	A-64411-2/RFT/RMS/RMK

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## FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document Country Code <sup>2</sup> Number <sup>3</sup> Kind Code <sup>5</sup> (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T <sup>6</sup>
	B21	WO 98/28444 A2	7/1998	Univ. of Chicago		
	B22	WO 98/35232 A2	8/1998	Univ. of N. Carolina		
	B23	WO 99/67425 A2	12/1999	Clinical Micro Systems		
	B24	WO 99/14596 A1	3/1999	AB Sangtec Medical		
	B25	WO 99/37819 A2	7/1999	Clinical Micro Systems		
	B26	EP 0 589 867 B1	4/1996	Pharmacia Biosensor		
	B27	WO 90/05303 A1	5/1990	Pharmacia AB		

## OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>6</sup>
	C1	AIZAWA, et al., "Integrated Molecular Systems for Biosensors," Sensors and Actuators B Chemical, B 24-25:1-5 (1995)	
	C2	ALBERS, et al., "Design of Novel Molecular Wires for Realizing Long-Distance Electron Transfer," Biochemistry and Bioenergetics, 42:25-33 (1997).	
	C3	ALLEMAN, K.S., et al., "Electrochemical Rectification at a Monolayer-Modified Electrode," J. Phys. Chem., 100:17050-17058 (1996).	
	C4	ARKIN, et al. "Evidence for Photoelectron Transfer Through DNA Intercalation," J. Inorganic Biochem. Abstracts, 6th International Conference on Bioinorganic Chemistry, 51(1) & (2):526 (1993).	
	C5	BARISCI, et al., "Conducting Polymer Sensors," TRIP, 4(9):307-311 (1996)	
	C6	BAUM, R. M., "Views on Biological, Long-Range Electron Transfer Stir Debate," C&EN, pp 20-23 (1993).	
	C7	BECHTOLD, R., et al., "Ruthenium-Modified Horse Heart Cytochrome c: Effect of pH and Ligation on the Rate of Intramolecular Electron Transfer between Ruthenium(II) and Heme(III)," J. Phys. Chem., 90(16):3800-3804 (1986).	
	C8	BEATTIE, et al., "Genosensor Technology," Clinical Chemistry, 39(4): 719-722 (1993).	
	C9	BIDAN, "Electroconducting conjugated polymers: new sensitive matrices to build up chemical or electrochemical sensors. A Review," Sensors and Actuators, B6:45-56 (1992).	
	C10	Biotechnology and Genetics: Genetic Screening Integrated Circuit," The Economist (February 25-March 3, 1995).	
	C11	BLONDER, et al., "Three-dimensional Redox-Active layered Composites of Au-Au, Ag-Ag and Au-Ag Colloids," Chem. Commun. 1393-1394 (1998).	
	C12	BOGUSLAVSKY, L. et al., "Applications of redox polymers in biosensors," Solid State Ionics, 60:189-197 (1993).	
	C13	BAMDAD, C. "A DNA self-assembled monolayer for the specific attachment of unmodified double - or single stranded DNA," Biophysical Journal, 75:1997-2003 (1988).	

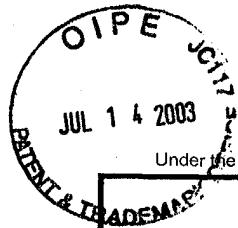
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Sheet	5	of	11	Filing Date	August 3, 2001
				First Named Inventor	Meade, Thomas
				Group Art Unit	1637
				Examiner Name	Strzelecka, Teresa, Ph.D.
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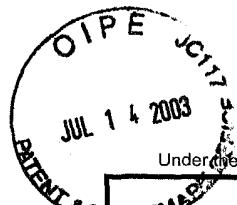
OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS					
Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.			
	C14	BOWLER, B. E., et al., "Long-Range Electron Transfer in Donor (Spacer) Acceptor Molecules and Proteins," <i>Progress in Inorganic Chemistry: Bioinorganic Chemistry</i> , 38:259-322 (1990).			
	C15	BRUN, A. M., et al., "Photochemistry of Intercalated Quaternary Diazaaromatic Salts," <i>J. Am. Chem. Soc.</i> , 113:8153-8159 (1991).			
	C16	BUMM, et al., "Are Single Molecular Wires Conducting?," <i>Science</i> 271:1705-1707 (1996).			
	C17	CANTOR, C.R., et al., "Report on the Sequencing by Hybridization Workshop," <i>Genomics</i> , 13:1378-1383 (1992).			
	C18	CARR, et al., "Novel Electrochemical Sensors for Neutral Molecules," <i>Chem. Commun.</i> , 1649-1650 (1997).			
	C19	CARTER, et al., "Voltammetric Studies of the Interaction of Metal Chelates with DNA. 2. Tris-Chelated Complexes of Cobalt(III) and Iron(II) with 10-Phenanthroline and 2,2'-Bipyridine," <i>J. Am. Chem. Soc.</i> , 111:8901-8911 (1989).			
	C20	CHANG, I-JY, et al., "High-Driving-Force Electron Transfer in Metalloproteins: Intramolecular Oxidation of Ferrocytocrome c by Ru(2,2'-bpy) <sub>2</sub> (im)(His-33) <sup>3+</sup> ," <i>J. Am. Chem. Soc.</i> , 113:7056-7057 (1991).			
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	C22	CHIDSEY, C.E.D., et al., "Free Energy and Temperature Dependence of Electron Transfer at the Metal Electrolyte Interface," <i>Science</i> , 251:919-922 (1991).			
	C23	CHRISSEY, et al., "Covalent attachment of synthetic DNA to self-assembled monolayer films," <i>Nucleic Acids Research</i> , 24(15):3031-3039 (1996).			
	C24	CLERY, "DNA Goes Electric," <i>Science</i> , 267:1270 (1995).			
	C25	Commerce Business Daily Issue of September 26, 1996 PSA#1688.			
	C26	DAVIS, L. M., et al., "Electron Donor Properties of the Antitumour Drug Amsacrine as Studied by Fluorescence Quenching of DNA-Bound			
	C27	DAVIS, L. M., et al., "Elements of biosensor construction," <i>Enzyme Microb. Technol.</i> 17:1030-1035 (1995).			
	C28	DEGANI, et al., "Direct Electrical Communication between Chemically Modified Enzymes and Metal Electrodes. 2. Methods for Bonding Electron-Transfer Relays to Glucose Oxidase and D-Amino-Acid Oxidase," <i>J. Am. Chem. Soc.</i> 110:2615-2620 (1988).			
	C29	DEGANI, Y., et al., "Electrical Communication between Redox Centers of Glucose Oxidase and Electrodes via Electrostatically and Covalently Bound Redox Polymers," <i>J. Am. Chem. Soc.</i> , 111:2357-2358 (1989).			
	C30	DEGANI, Y., et al., "Direct Electrical Communication between Chemically Modified Enzymes and Metal Electrodes. 1. Electron Transfer from Glucose Oxidase to Metal Electrodes via Electron Relays, Bound Covalently to the Enzyme," <i>J. Phys. Chem.</i> , 91(6):1285-1288 (1987).			
	C31	DEINHAMMER, R.S., et al., "Electronchemical Oxidation of Amine-containing compounds: A Route to the Surface Modification of glassy carbon electrodes," <i>Langmuir</i> , 10:1308-1313 (1994).			
	C32	DREYER, G. B., et al., "Sequence-specific cleavage of single-stranded DNA: Oligodeoxynucleotide-EDTA/Fe(II)," <i>Proc. Natl. Acad. Sci. USA</i> , 82:968-972 (1985).			
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### Complete if Known

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Examiner Name	Strzelecka, Teresa, Ph.D.

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### OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS

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	C33	DROBYSHEV, A., et al., "Sequence Analysis by Hybridization with Oligonucleotide Microchip: Identification of $\beta$ -thalassemia Mutations," <i>Gene</i> , 188:45-52 (1997).	
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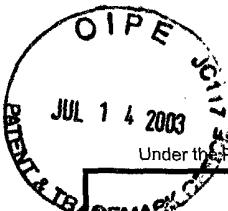
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<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> (use as many sheets as necessary)				Application Number	09/921,645
Sheet	7	of	11	Filing Date	August 3, 2001
				First Named Inventor	Meade, Thomas
				Group Art Unit	1637
				Examiner Name	Strzelecka, Teresa, Ph.D.
				Attorney Docket Number	A-64411-2/RFT/RMS/RMK

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	C50	HASHIMOTO, et al., "Sequence-Specific Gene Detection with a Gold Electrode Modified with DNA Probes and an Electrochemically Active Dye," <i>Anal. Chem.</i> 66:3830-3833 (1994).	
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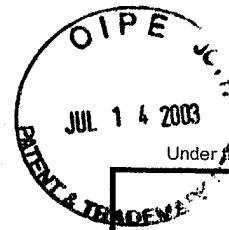
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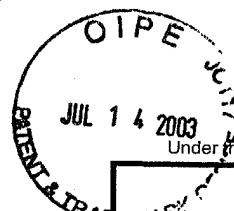
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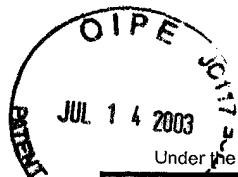
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				Filing Date	August 3, 2001
				First Named Inventor	Meade, Thomas
				Group Art Unit	1637
				Examiner Name	Strzelecka, Teresa, Ph.D.
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	C122	WEBER, et al., "Voltammetry of Redox-Active Groups Irreversibly Adsorbed onto Electrodes. Treatment Using the Marcus Relation between Rate and Overpotential," <i>Anal. Chem.</i> , 66:3164-3172 (1994).	
	C123	WILLIAMS, et al., "Studies of oligonucleotide interactions by hybridisation to arrays: the influence of dangling ends on duplex yield," <i>Nucleic Acids Research</i> , 22(8):1365-1367 (1994).	
	C124	WINKLER, J. R., et al., "Electron Transfer in Ruthenium-Modified Proteins," <i>Chem. Rev.</i> , 92:369-379 (1992).	
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	C127	YANG, et al., "Growth and Characterization of Metal(II) Alkaneobisphosphonate Multilayer Thin Films on Gold Surfaces," <i>J. Am. Chem. Soc.</i> , 115:11855-11862 (1993).	
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	C131	ZIMMERMANN, et al., "DNA stretching on functionalized gold surfaces." <i>Nucleic Acids Res.</i> 22(3):492-7 (1994).	

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